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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,156	11/29/2000	John D. Blake JR.	414.039	8567

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EXAMINER	
LEVITAN, DMITRY	

ART UNIT	PAPER NUMBER
2662	9

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/725,156	BLAKE ET AL.	
	Examiner	Art Unit	
	Dmitry Levitan	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 29 November 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a) the digital subscriber line must be shown on all drawings when referenced in the specification, b) remote DSLAM Terminal must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

1. The disclosure is objected to because of the following informalities:

   a. Typographical error on page 12: "A synchronous" instead of Asynchronous.

   b. Typographical error on page 13: "testing and maintenance equipment 142" instead of testing and maintenance equipment 144.

   c. Specification does not provide adequate disclosure of PVD operation. It is unclear how PVD interact with NID. Is it a packet, digital or analog connection?

   d. The abstract of the disclosure is objected to because it is too long. See MPEP § 608.01(b).

Appropriate correction is required.

Claim Objections

2. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the

claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 18 limitation "further comprising a main distribution frame and multi-line protector block does not limit parent claim 17, where DSLAM is connected to the digital switch with a fiber optic cable.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not provide sufficient details to enable a skilled in the art to make and use the invention because it does not adequately describe the following:

Regarding claim 1, how to complete calls from said PVDs to subscribers over respective copper loop facilities connecting said PVDs to telephone equipment of said subscribers.

Regarding claim 4, how to install DSL at one or more remote DSLAM terminals.

Regarding claim 6, how to terminate DSL circuits at respective PVDs located at remote DSLAM terminals.

Regarding claim 10, how to provide voice telephone service to subscribers through respective PVD and NID.

The specification does not provide enough details about the structure and operation of the elements associated with the above identified claimed features to enable one skilled in the art to make and use the invention without undue experimentation.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 limitation "plural DSL services between a telephone facility and a remote facility" is unclear, because plural DSL services can be interpreted as plural DSL systems between a telephone facility and a remote facility, or plural services on each DSL channel between the facilities, or plural DSL channels between the facilities.

Claim 6 limitation "terminating said DSL circuits at respective PVDs located at remote DSLAM terminals" is indefinite, because it is unclear what (DSL circuits or PVDs) is located at remote DSLAM terminals.

Claim 10 recites the limitation "said voice switch" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 and 15 limitations "DSLAM connected to a voice (digital) switch" and "further comprising a packet switch connecting DSLAM to the digital switch" are unclear, because

Applicant uses "connecting" what means a direct connection between, for example, two devices as "coupling", where an intermediate device is present between two interacting devices.

Claim 11 limitation "one of a packet and voice switch" is unclear, because it is not understood what switch Applicant is considering in this claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-12, 15-17, 21 and 22 are rejected (as understood) under 35 U.S.C. 102(e) as being anticipated by Frankel (US 6,639,913).

Regarding claim 1, Frankel teaches a method for providing voice grade service to a plurality of subscribers using existing telephone loop facilities (Fig. 1 and existing copper wire pair lines 2:12-19), comprising:

Configuring said telephone loop facilities to provide plural DSL services between a telephone facility (central switching facility 30 on Fig. 8) and a remote facility (RDT 500 on Fig. 8 and 12:23-37) using respective DSL circuits (DSL lines 24 on Fig. 8 and 4:22-24);

Assigning a plurality of subscriber lines to each of the DSL circuits (lines connecting subscribers TD 10 to RDT 500 on Fig. 8);

Routing calls terminating at a central office to an associated one of said DSL circuits (from switch 32 to DSL circuit 24 between HDT 200 and RDT 100/500 9:31-52);

Transmitting calls on said DSL circuits to respective PVDs (DSL modems 120, SRAM 130, ROM 140 and controller 110 on Fig. 9 and 12:29-53) located at said remote facility;

Completing calls from the PVDs to nearby ones of said subscribers over respective copper loop facilities connecting said PVDs to telephone equipment of the subscribers (9:31-52).

Regarding claims 2 and 12, Frankel teaches supplying power to PVD independent from local commercial power source (12:65-67 and 13:1-2).

Regarding claim 3, Frankel teaches installing DSL at offsite near the respective group of subscribers served by DSL (RDT 100 resides at the customer site 7 on Fig. 1 and 4:18-20).

Regarding claim 4, Frankel teaches collocating DSL terminal with DSLAM (integrating WC RDT 500 and DSLAM 64 on Fig. 8 and 12:52-53), which in turn supplies service area interfaces (DSL interfaces to customer sites 7 on Fig. 8).

Regarding claim 5, Frankel teaches installing DSL at the ends of drop wires (RDT 100 utilizing existing wiring 25 on Fig. 1) wherein the other ends of drop wires are connected to NIDs at customer premises (remote digital terminal at the customer site 16:3-10).

Regarding claim 6, Frankel teaches an existing telephone network comprising interconnected central offices providing services to nearby subscribers connected by local loop facilities including a feeder distribution system connecting the central offices to respective serving area and local drops (PSTN 42 on Fig. 1 and 8), comprising

Configuring said feeder/distribution system to provide plural DSL between said central offices and said serving area (wire center 68 and WC RDT 500 on Fig. 8 and 13:43-50);

Terminating said DSL circuits at respective PVDs (connecting DSL modems 120, SRAM 130, ROM 140 and controller 110 on Fig. 9, interpreted as PVD, with DSL lines 24 to remote DSLAM 64 on Fig. 8) located at remote DSLAM terminals; and

Assigning a plurality of subscriber lines to each of said DSL circuits (TD10 connected to WC RDT 500 on Fig. 8).

Regarding claim 7, Frankel teaches routing calls termination at central office to an associated DSL circuit; transmitting calls to respective PVD and completing calls to subscribers over copper loop (procedure 9:31-65).

Regarding claims 8 and 9, Frankel teaches detecting off-hook at local drop, transmitting dial tone from central office to the drop through associated DSL circuit (call-setup procedure 8:49-64 including a traditional dial tone 8:58), collecting dialed digits at central office received from local drop through DSL circuit and completing a voice call (making and receiving PSTN calls/full duplex calls in the traditional fashion 9:53-65).

Regarding claim 10 and 11, Frankel teaches a telephone system comprising:
Network switching facilities including (i) a digital switch (ATM/data switch 62 on Fig. 1 and 4:29-36), (ii) a DSLAM connected to said voice switch (DSLAM 64 connected to central switching facility 30 on Fig. 1);
Local loop transmission facilities connected to the DSLAM (RDT 100 connected to DSLAM 64 through DSL 24 on Fig. 1) and
A PVD (DSL modems 120, SRAM 130, ROM 140 and controller 110 on Fig. 9) connected (a) to said DSLAM via local loop transmission facilities (DSL 24 on Fig. 1) and (b) to plurality of

copper loops (loops 25 on Fig. 1) terminated by NIDs (remote digital terminal at the customer site 16:3-10) at the subscriber side to provide telephone service.

Regarding claim 15, Frankel teaches a packet switch connected to said DSLAM and digital switch (data switch 62 on Fig. 1 and 4:32-36).

Regarding claims 16, 17 and 21, Frankel teaches locating PVD in a weatherproof enclosure (wire center 58 including WC RDT 500 located in a cabinet or vault, inherently weatherproofing the enclosure 13:4-8) having a plurality of line modules connected to copper loops (SLICs 150 0n Fig. 9), connecting DSLAM to the digital Switch with a fiber (fibers 26 and 66 on Fig. 1 and 4:33-36, 5:15-16).

Regarding claim 22, Frankel teaches a digital switch (central switching facility 30 on Fig. 1) includes a switch module (PSTN switch 32 on Fig. 1) including a plurality of analog POTS line cards (inherently part of any switch interconnected with PSTN, because PSTN operates with POTS lines) associated with the subscribers (connecting subscribers with PSTN telephones).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13, 14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel.

Regarding claims 13 and 14, Frankel teaches the limitations of parent claim 10, including a digital switch interface with DSLAM (line 26 coupling DSLAM through data switch 62 on Fig. 1) and integrating LPN (plurality of DSLAM and data switches) with HDT.

Frankel does not teach using plurality of line cards in a digital switch and utilizing MDF for line cards and DSLAM connections with copper loops.

Official notice is taken that using plurality of line cards in a digital switch and utilizing MDF for line cards and DSLAM connections with copper loops is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use plurality of line cards in a digital switch and utilize MDF for line cards and DSLAM connections with copper loops in the system of Frankel to simplify maintenance on the switch, using replaceable line cards, and on wire connections, using main distribution frame that is present in all central offices.

Regarding claims 18 and 19, Frankel teaches the limitations of parent claim 17, including using protection circuitry on local loops (Fig. 9).

Frankel does not teach using multi-line protector block at central office and add/drop multiplexer and a digital cross connect to connect DLC to the digital switch.

Official notice is taken that using multi-line protector block at central office and add/drop multiplexer and a digital cross connect to connect DLC to the digital switch is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use multi-line protector block at central office and add/drop multiplexer with a digital cross

connect to connect DLC to the digital switch in the system of Frankel to improve the system reliability and flexibility.

Regarding claim 20, Frankel teaches supplying power to PVD independent from local commercial power source (12:65-67 and 13:1-2).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Frankel	US006639913B1	System and method for communicating over local packet network.
Frankel	US006075784A	System and method for communicating over local packet network.
Long	US006728238B1	Dynamic allocation of voice and data channels in a TDM system.
Gorman	US006370149B1	Telecommunication system and method.
Bossemeyer	US006285671B1	Method and system for providing FAX over DSL.
Gerszberg	US006424646B1	ISD overall architecture.
Gelman	US006493348B1	XDSL-based internet access router.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is 703-305-4384. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL

Dmitry Levitan
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06/03/04.

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